(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 15 July 2004 (15.07.2004)

PCT

(10) International Publication Number WO 2004/058328 A3

(51) International Patent Classification7:

G02B 6/06

(21) International Application Number:

PCT/US2003/041095

(22) International Filing Date:

19 December 2003 (19.12.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 10/324,897

20 December 2002 (20.12.2002)

(63) Related by continuation (CON) or continuation-in-part (CIP) to earlier application:

10/324,897 (CIP)

Filed on

20 December 2002 (20.12.2002)

- (71) Applicant (for all designated States except US): TRIME-DYNE, INC. [US/US]; 15091 Bake Parkway, Irvine, CA 92618 (US).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): LOEB, Marvin, P. [US/US]; 2872 Coast Circle, Apt. 101, Huntington Beach, CA 92649 (US).

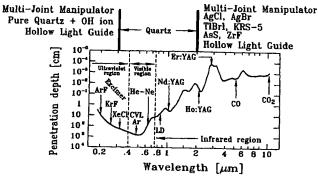
- (74) Agents: CEPURITIS, Talivaldis et al.; Olson & Hierl, Ltd., 20 North Wacker Drive, 36th Floor, Chicago, IL 60606 (US).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: DEVICE AND METHOD FOR DELIVERY OF LONG WAVELENGTH LASER ENERGY TO A TISSUE SITE



(57) Abstract: A laser energy delivery device is provided that is suitable for irradiating a body tissue with relatively long wavelength laser energy in the presence of an aqueous liquid without significant absorption of the laser energy by the liquid. The device includes an elongate hollow sheath that has an open aperture at its distal end portion and closed at its proximal end, a laser energy conduit such as an optical fiber or hollow wave guide, within the sheath, the distal end of the conduit being disposed near the open aperture at the distal end portion of the sheath, and the proximal end of the conduit being adapted for connection to a source of long wavelength laser energy. The sheath also includes an inlet port, spaced from the proximal end of the sheath, and adapted to receive and deliver a biologically compatible gas through the sheath to a body tissue site in contact with the open distal end of the sheath. In use, the open aperture at the distal end portion of the sheath is positioned in contact with a body tissue site. Gas, such as carbon dioxide, infused through the sheath displaces an aqueous liquid from the region between the distal end portion of the sheath and the tissue. Laser energy emitted from the distal end portion of the conduit passes through the substantially liquid-free region at the distal end of the sheath and impinges on the tissueto be irradiated. The laser energy can be used to ablate, vaporize, coagulate or shrink tissue at the target zone without interference from aqueous liquids, which tend to absorb relatively large amounts of long wavelength laser energy and reduce the efficiency of tissue ablation.







(88) Date of publication of the international search report: 7 October 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/41095

IPC	CLASSIFICATION OF			
	(7) : G02B 6/06			
US	CL : 385/117,123	,125,126,127,115,116,12; 604/2	24	
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